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10/538,750

03/24/2006

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EXAMINER

DOLLINGER, MICHAEL M

ART UNIT

PAPER NUMBER

1766

NOTIFICATION DATE

DELIVERY MODE

01/05/2011

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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| | | | |
|------------------------------|--------------------------------------|-----------------------------------|--|
| Office Action Summary | Application No. 10/538,750 | Applicant(s) TAN ET AL. | |
| | Examiner MIKE DOLLINGER | Art Unit 1766 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 December 2010.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 3-5 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 and 3-5 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 1, and 3-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Barbee (US 4,565,851) in view of Sakurai (JP 2002-264206 A).
2. Barbee discloses containers having improved resistance to gas permeability comprising a polymer blend composition comprising about 5 to 50 percent by weight of a first polyester comprising polyglycolic acid and correspondingly about 50 to 95 percent by weight of a second polyester [abstract]. The inventive examples show blends of polyethylene terephthalate (a crystalline polyester) and 10, 25 and 50 weight percent polyglycolic acid [column 4 lines 13-15] which were compounded by melt extruding [column 4 lines 17-20]. This blend is very similar in composition and preparation to that of Applicant's Example 4. Furthermore, the polyglycolic acid and second polyester of Barbee have similar intrinsic viscosities to claimed components (A) and (B), respectively [see column 2 lines 4-7 and 48-52 of Barbee compared to paragraphs 0034 and 0062 of US PGPub of the present application US 2006/0217523 A1]. Barbee teaches that the polyesters may be mixed by melt extrusion [col 3 lines 42-43] at

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a temperature of 240-260 °C [col 4 lines 17-20]. This temperature and mixing method reads on the process in Applicants' specification [see Applicants' specification page 28 line 17 through page 29 line 2].

3. Barbee does not disclose the specific polyester (A) of the claims which has a glass transition temperature of 25 to 90 °C and is prepared from glycolic acid, ethylene glycol and aromatic diacid. Barbee does teach that disclosed composition is intended to provide packaging materials with improved resistance to gas permeability [col 1 lines 29-33].

4. Sakurai discloses thermoplastic copolymers based on glycolic acid for packaging materials which excels in gas barrier properties [0001]. The glycolic acid series copolymer is preferably prepared from 78-90 mol % glycolide and 22 to 10 mol % other monomers [0028]. The glycolic acid may be copolymerized with a polyhydric alcohol and a polyvalent carboxylic acid of an equimolar amount and including ethylene glycol and aromatic dicarboxylic acid including terephthalic acid, isophthalic acid and naphthalene dicarboxylic acid [0027].

5. Regarding the amount of hydroxy carboxylic acid units of 5 or less carbon atoms in moles based on 100% of moles of all constituent units, Examiner has calculated the mol% of glycolic acid in Barbee based on the range of weight percent of 5 to 50 wt% of polyglycolic acid and 50 to 95 wt% of the preferred PET. The range is 8 to 62 mol% of glycolic acid. The range of Barbee in view of Sakurai will of course be lower due to the presence of comonomers with the glycolic acid. The disclosed range overlaps the ranges of claims 1 and 5 for mole percent of glycolic acid. In the case where the claimed ranges "overlap or

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lie inside ranges disclosed by the prior art" a *prima facie* case of obviousness exists. *In re Wertheim*, 541 F.2d 257, 191 USPQ 90 (CCPA 1976); *In re Woodruff*, 919 F.2d 1575, 16 USPQ2d 1934 (Fed. Cir. 1990), *In re Geisler*, 116 F.3d 1465, 1469-71, 43 USPQ2d 1362, 1365-66 (Fed. Cir. 1997).

6. Regarding the limitation in claim 1 requiring that the copolymer (A) has a glass transition temperature from 25 to 90 °C, though there is no explicit disclosure of the glass transition temperature of glycolic acid copolymer in Sakurai there are two implicit disclosures. Firstly, Sakurai discloses that the glycolic acid copolymer is crystalline [0011] which is an implicit disclosure of a glass transition temperature range of 25 °C (room temperature) or greater, which is overlapping with the claimed range. Secondly, Sakurai discloses that the extension temperature is between the glass transition temperature and 60 °C above the glass transition temperature, preferably between the glass transition temperature and 40 °C above the glass transition temperature [0041]. Since the exemplified extension temperature is 65 °C [0061] this is an implicit disclosure of a range of glass transition temperature between 5 °C and 65 °C, preferably 25 °C and 65 °C. In the case where the claimed ranges "overlap or lie inside ranges disclosed by the prior art" a *prima facie* case of obviousness exists. *In re Wertheim*, 541 F.2d 257, 191 USPQ 90 (CCPA 1976); *In re Woodruff*, 919 F.2d 1575, 16 USPQ2d 1934 (Fed. Cir. 1990), *In re Geisler*, 116 F.3d 1465, 1469-71, 43 USPQ2d 1362, 1365-66 (Fed. Cir. 1997).

7. It would have been obvious to one having ordinary skill in the art the time the invention was made to have prepared a polyester resin comprising a 1 to 50

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parts by weight of (A) a copolyester of glycolic acid, ethylene glycol, and terephthalic acid with a T_g between 25 and 90°C and 99 to 50 parts by weight of crystalline polyester not identical with (A) because Barbee teaches that it is within the skill of the art to prepare a packaging material from 5 to 50 percent by weight of a first polyester comprising polyglycolic acid and correspondingly about 50 to 95 percent by weight of a second polyester including (B) polyethylene terephthalate and Sakurai teaches that it is within the skill of the art to prepare a packaging material from (A) a crystalline glycolic acid copolymer prepared from glycolide, ethylene glycol and terephthalic acid. One would have been motivated to use the crystalline glycolic acid copolymer of Sakurai as the polyglycolic acid of Barbee because Sakurai teaches that the copolymer has excellent gas barrier properties and Barbee seeks a composition that has low gas permeability. Absent any evidence to the contrary, there would have been a reasonable expectation of success using the glycolic acid copolymer of Sakurai as the polyglycolic acid of Barbee.

8. Since Barbee in view of Sakurai teaches the same composition as claimed and prepared by the same process, the ratio S_{AA}/S_{BB} of the polyester resin composition would inherently be the same as claimed. If there is any difference between the product of Barbee in view of Sakurai and the product of the instant claims the difference would have been minor and obvious. "Products of identical chemical composition can not have mutually exclusive properties." A chemical composition and its properties are inseparable. Therefore, if the prior art teaches the identical chemical structure, the properties applicant discloses and/or claims

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are necessarily present. See MPEP 2112.01(I) , *In re Best*, 562 F2d at 1255, 195 USPQ at 433, *Titanium Metals Corp v Banner*, 778 F2d 775, 227 USPQ 773 (Fed Cir 1985), *In re Ludtke*, 441 F2d 660, 169 USPQ 563 (CCPA 1971) and *Northam Warren Corp v D F Newfield Co*, 7 F Supp 773, 22 USPQ 313 (EDNY 1934).

9. Where applicant claims a composition in terms of a function, property or characteristic and the composition of the prior art is the same as that of the claim but the function is not explicitly disclosed by the reference, the examiner may make a rejection under both 35 USC 102 and 103. "There is nothing inconsistent in concurrent rejections for obviousness under 35 USC 103 and for anticipation under 35 USC 102." See MPEP 2112(III) and *In re Best*, 562 F2d at 1255, 195 USPQ at 433.

Response to Arguments

10. Applicant's arguments filed 12/17/2010 have been fully considered but they are not persuasive.

11. Applicants argue that when Sakurai discloses that the glycolic acid series copolymer in paragraph [0028] has 78 to 90 mol% glycoside and 10 to 22 mol% of other monomers, these other monomers are cyclic ester monomers as disclosed in paragraph [0029] rather than the diacid and diol monomers of the claims. This argument is not convincing. The monomers of paragraph [0029] are the *preferable* other monomers. The other monomers of paragraph [0028]

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can be many other cyclic ester monomers [0026] and the diacid and diol monomers of the claims [0027]. This argument is not convincing. Applicants' arguments amount to a contention that the claimed element is a nonpreferred embodiment of the prior art. A reference may be relied upon for all that it would have reasonably suggested to one having ordinary skill the art, including nonpreferred embodiments, see *Merck & Co. v. Biocraft Laboratories*, 874 F.2d 804, 10 USPQ2d 1843 (Fed. Cir.), cert. denied, 493 U.S. 975 (1989). Disclosed examples and preferred embodiments do not constitute a teaching away from a broader disclosure or nonpreferred embodiments, see *In re Susi*, 440 F.2d 442, 169 USPQ 423 (CCPA 1971).

12. Applicants emphasize the advantageous effects of the present invention by comparing inventive example 3 that uses a PGA copolymer with 70.1 mol% glycolic acid, comparative example 1 that uses a PGA homopolymer, and comparative example 3 that uses a PGA copolymer with 19.7 mol% glycolic acid. Applicants argue that only the inventive example 3 shows the claimed ratio S_{AA}/S_{BB} and has superior CO₂ permeability constant and transparency. Applicants argue that the comparative example 1 with PGA homopolymer corresponds to the examples of Sakurai and that the comparative example 3 corresponds to the disclosure of PGA copolymer relied upon in Examiner's rejection. Finally Applicants argue that the since the comparative examples and the inventive examples were melt mixed like the claimed and disclosed mixing process, this refutes Examiner's arguments that the combination of Barbee and Sakurai would intrinsically result in the S_{AA}/S_{BB} ratio of the claims. These

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arguments are not convincing. Firstly, neither comparative example accurately represents Barbee in view of Sakurai. Comparative example 1 does not represent the examples of Sakurai because the examples have a PGA copolymer with cyclic ester comonomers. This is irrelevant, however, because Examiner's rejection does not rely upon the examples of Sakurai. More importantly, comparative example 3 does not represent the disclosure of Sakurai because Sakurai discloses PGA copolymer with 78 to 90mol% of glycolic acid and the PGA copolymer of comparative example 3 contains 19.7mol% glycolic acid [paragraph 0124 of US 2006/0217523 A1]. Furthermore, the other inventive PGA copolymers contain 70.1 mol%, 58.9 mol% and 98.0 mol% and all result in the claimed S_{AA}/S_{BB} when melt mixed the same way as comparative example 3 [see paragraphs 0118, 0121, 0122 and Table 1 of US 2006/0217523 A1]. So the evidence presented by Applicants actually supports Examiner's conclusion that the combination of Barbee in view of Sakurai intrinsically has the claimed S_{AA}/S_{BB} ratio.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MIKE DOLLINGER whose telephone number is (571)270-5464. The examiner can normally be reached on M-F 9-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy Gulakowski can be reached on 571-272-1302.

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The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/mmd/

/RANDY GULAKOWSKI/
Supervisory Patent Examiner, Art Unit 1766